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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,191	09/26/2001	Isao Kakuhari	29288.2700	1298

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EXAMINER

SELLERS, DANIEL R

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,191

Applicant(s)

KAKUHARI ET AL.

Examiner

Daniel R. Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/26/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-18, drawn to digital audio processing, classified in class 700, subclass 94.
 - II. Claims 19-23, drawn to a recordable medium with a specific structure, classified in class 707, subclass 104.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions. Invention I is a signal processing apparatus, as shown in figures 1A-1C, and Invention II is a recordable medium with a specific structure, as shown in figures 2-6.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Shahpar Shahpar on 4/28/05 a provisional election was made with traverse to prosecute the invention of group I, claims 1-18.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 19-23 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kaneko et al., U.S. Patent No. 4,758,910 (hereinafter Kaneko).

7. Regarding claim 1, see Kaneko

A signal processing apparatus for processing an acoustic signal reproduced together with an image signal, the signal processing apparatus comprising:

a memory for storing a plurality of filter coefficients for correcting the acoustic signal; (Col. 4, lines 49-55)

a filter coefficient selection section for receiving a correction command, from outside the signal processing apparatus, for specifying a correction method for the acoustic signal and selecting at least one of the plurality of filter coefficients stored in the memory based on the correction command; (Fig. 3, units 60) and

a correction section for correcting the acoustic signal using the at least one filter coefficient selected by the filter coefficient selection section. (Col. 3, lines 5-10)

Kaneko teaches a signal processing apparatus with all the above features.

8. Claims 2-17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kitamura, U.S. Patent No. 6,704,421.

9. Regarding claim 2, the further limitation of claim 1, see Kitamura

... wherein the correction command is input to the signal processing apparatus by receiving of a broadcast signal or a communication signal. (Col. 3, lines 34-39)

Kitamura teaches a multichannel equalization control system with these features and the features of the previous claim. Kitamura teaches a memory for storing coefficients

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(Col. 6, lines 1-4), the filter coefficient selection section (Col. 2, lines 56-60 and Col. 4, lines 22-27), and the correction section (Fig. 3, unit 70).

10. Regarding claim 3, the further limitation of claim 1, see the preceding argument with respect to claim 2. Kitamura teaches a device, wherein the correction command is recorded on a recording medium, such as a hard disk drive (Col. 3, lines 28-34).

11. Regarding claim 4, the further limitation of claim 1, see Kitamura

... wherein the memory is arranged so as to receive at least one filter coefficient for correcting the acoustic signal from outside the signal processing apparatus, and to add the at least one filter coefficient received to the plurality of filter coefficients stored in the memory or to replace at least one of the plurality of filter coefficients stored in the memory with the at least one filter coefficient received. (Col. 9, lines 45-52).

Kitamura teaches a method of receiving filter coefficients from outside the signal processing apparatus, and these coefficients replace any previous coefficients used prior.

12. Regarding claim 5, the further limitation of claim 4, see the preceding argument with respect to claim 4. Kitamura teaches a system where the coefficients outside the signal processing apparatus are obtained from reproduction of the recording medium.

13. Regarding claim 6, the further limitation of claim 5, see Kitamura. Kitamura teaches an audio signal processing device that has video processing capabilities (Fig. 1, units 20, 22, and 24 and Col. 3, lines 49-51). It is inherent that the speed into the buffer is higher than the speed out for the purpose of uninterrupted playback and synchronization. It is inherent that the filter coefficient(s) are stored in the memory while the image and video are being output from the buffer for the purpose of filtering the audio, otherwise it would defeat the purpose of using a filter structure. Furthermore, it is inherent that the time period required for the buffer to be output is equal to a time period

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for the coefficient(s) to be in memory so that the filter, with the coefficient(s), processes the entirety of the data signal.

14. Regarding claim 7, the further limitation of claim 1, see Kitamura

... wherein:

the at least one filter coefficient selected includes at least one filter coefficient representing a transfer function showing an acoustic characteristic of a direct sound from a sound source to a viewer/listener, (Col. 4, lines 40-46) and

the correction section includes a transfer function correction circuit for correcting a transfer function of the acoustic signal in accordance with the at least one filter coefficient representing the transfer function. (Fig. 1, units 16 and 24, and Fig. 3, units 50 and 70).

Kitamura teaches parametric equalization parameters, which are coefficients representing a transfer function with an acoustic characteristic of direct sound from a source to a listener.

15. Regarding claim 8, the further limitation of claim 1, see the preceding argument with respect to claim 7. Kitamura teaches the reflection structure as ceiling and floor level data, reverberation control data, and delay control data. It is inherent in the structure of filters that multiplication and addition is performed, and in view of figure 3 and column 6, lines 35-37, it is inherent that the reflection component output is added to the filtered signal output in parallel or series.

16. Regarding claim 9, the further limitation of claim 1, see the preceding argument with respect to claim 7. Kitamura teaches the use of floor and ceiling parameters, delay control data, and reverberation control data. Kitamura also teaches that the reflection characteristic is added after filtering (Fig. 3).

17. Regarding claim 10, the further limitation of claim 1, see the preceding argument with respect to claim 2. Kitamura teaches templates, wherein a user is allowed to edit a

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template, and the templates are automatically chosen according to a correction command (Col. 4, lines 22-27).

18. Regarding claim 11, the further limitation of claim 8, see the preceding argument with respect to claim 7. Kitamura teaches reverberation (reverb) control data, wherein the reverb mixes delayed and filtered version of the input signal with itself (Col. 6, lines 24-28). The different delays correspond to different distances, and inherently the coefficients, in a filter such as this, correspond to the different delays, or distances.

19. Regarding claim 12, the further limitation of claim 9, see the preceding argument with respect to claim 11. Kitamura teaches at least two different coefficients corresponding to different distances.

20. Regarding claim 13, the further limitation of claim 8, see Kitamura

... wherein the at least one filter coefficient representing the reflection structure includes a third filter coefficient representing a reflection structure showing an acoustic characteristic of a reflection reaching the viewer/listener from a direction in a predetermined range. (Col. 6, lines 24-28 and Fig. 2, unit 48)

Kitamura teaches a third coefficient representing a reflection from a direction in a predetermined range.

21. Regarding claim 14, the further limitation of claim 9, see the preceding argument with respect to claim 13. Kitamura teaches a plurality of reflection structures, wherein there is a third coefficient representing a reflection from a direction in a predetermined range.

22. Regarding claim 15, the further limitation of claim 13, see Kitamura

... wherein the predetermined range is defined by a first straight line connecting the sound source and a center of a head of the viewer/listener and a second straight line extending from the center of the head of the viewer/listener at an angle of 15 degrees or less from the first straight line. (Col. 6, lines 41-44)

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Kitamura teaches a signal processing device with all the features of claim 13. Kitamura does teach a specific location or direction of reflected sound, wherein the angle can be zero.

23. Regarding claim 16, the further limitation of claim 14, see the preceding argument with respect to claim 15. Kitamura teaches an angle of less than 15 degrees.

24. Regarding claim 17, the further limitation of claim 1, see Kitamura

... wherein the acoustic signal includes multiple-channel acoustic signals, and the filter coefficient selection section selects a filter coefficient corresponding to each of the multiple-channel acoustic signals. (Col. 2, lines 60-64 and Fig. 3)

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura as applied to claim 2 above, and further in view of Saito et al., U.S. Patent No. 3,766,547 (hereinafter Saito).

27. Regarding claim 18, the further limitation of claim 1, see Saito

... further comprising a display section for displaying a distance between a sound source and a viewer/listener. (Col. 1, lines 55-64, and Col. 2, lines 6-23).

Kitamura teaches all the features of claim 1, but does not teach a display device wherein a distance between a sound source and a user is displayed. Saito teaches a display device with this feature in a multichannel environment. It would have been obvious for one of ordinary skill in the art to combine the teachings of Kitamura and

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Saito for the purpose of visual feedback with respect to balance and fade controls, which are well known in the art.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Atal et al., U.S. Patent No. 3,236,949, Lainez, U.S. Patent No. 4,347,527, Kendall et al., U.S. Patent No. 4,731,848, Myers, U.S. Patent No. 4,817,149, Cooper et al., U.S. Patent 4,910,779, and Dicker et al., U.S. Patent No. 6,798,889.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

DRS